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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/565,907

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EXAMINER

ROY, SIKHA

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/565,907	<b>Applicant(s)</b> WAKITA ET AL.	
	<b>Examiner</b> Sikha Roy	<b>Art Unit</b> 2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 August 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

The Amendment, filed on August 13, 2008 has been entered and acknowledged by the Examiner.

Cancellation of claim 3 has been entered.

The new title has been entered and approved by the Examiner.

Claims 1, 2, 4-9 are pending in the instant application.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1,4, 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the first cross-section" in page 3 line 20 and page 4 line 8. There is insufficient antecedent basis for this limitation in the claim.

Claim 4 recites the limitation "the first cross-section" in page 5 line 4 . There is insufficient antecedent basis for this limitation in the claim.

Claim 6 recites the limitation "the first cross-section" in page 7 line 6 and line 8. There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,2,4,8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent Application Publication 2002/0101155 to Kimura.

Regarding claim 1 Kimura discloses (Figs. 10,11 para [0143]- [0150]) an organic EL element comprising a substrate 300 having a first surface, a first electrode 347 above the first surface of the substrate, the first electrode having a first surface adjacent to the substrate and second surface opposite the first surface, an emissive layer 350 including an organic electroluminescent material, the emissive layer located on the second surface of the first electrode 347 and having a first surface adjacent to the first electrode and a second surface opposite the first surface, the surface of the first electrode having the multi-dimensionally meandering surface shape, both surfaces of the emissive layer having a multi-dimensionally meandering surface shape, one surface of the emissive layer facing the first electrode 347, the other surface of the emissive layer being opposite to the one surface facing the first electrode and a second electrode 351 -located on the second surface of the emissive layer, wherein the second surface of the first electrode has a multi-dimensionally meandering surface shape such that a cross-section of the second surface of the first electrode meanders, the cross- section being perpendicular to the first surface of the substrate, any second cross-section of the

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second surface (on the protrusion 364) of the first electrode meanders in a way that differs from the meandering shape of first cross-section (on the insulating film 349), the second cross-section being parallel to the first cross-section, and the first and second cross-sections meander in directions other than perpendicular to the substrate and wherein the first and second surfaces of the emissive layer 350 have a multi-dimensionally meandering surface shape such that a cross-section of the emissive layer meanders, the cross-section being perpendicular to the first surface of the substrate, any second cross-section of the emissive layer meanders in a way that differs from the meandering shape of the first cross-section, the second cross-section being parallel to the first cross-section, and the first and second cross-sections of the emissive layer meander in directions other than perpendicular to the substrate.

Regarding claim 2 it is clearly evident from Fig. 10B of Kimura that the thickness of the emissive layer 350 is uniform.

Regarding claim 4 Kimura discloses a first surface of the second electrode 351 faces the emissive layer 350 and has a multi-dimensionally meandering surface shape, such that a cross-section of the first surface of the second electrode meanders, the cross-section being perpendicular to the first surface of the substrate, any second cross-section of the first surface of the second electrode meanders in a way that differs from the meandering shape of first cross-section, the second cross-section being parallel to the first cross-section, and the first and second cross-sections meander in directions other than perpendicular to the substrate.

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Regarding claim 8 Kimura discloses (Figs. 10,11) all the limitations same as of claim 1 and additionally discloses electronic circuit formed on the substrate, controlling the light emission from the organic EL element.

Regarding claim 9 Kimura discloses all the limitations same as of claim 1 and additionally discloses voltage application wire formed on the substrate and the EL element connected with the voltage application wire.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent Application Publication 2002/010155 to Kimura and further in view of JP 53079 to Manabe et al. (of record).

Regarding claim 5 Kimura is silent regarding the actual length and the projected length satisfying the inequality 1.

Manabe in same filed of endeavor discloses the roughness of the EL surface contacting rough surface of the first electrode results in averaging the interference effect and reduces visual angle dependence. Hence it is noted that the more the roughness of the surface the better averaging of interference effect and reduction of visual angle dependence will result.

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It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. Therefore it would be obvious to one of ordinary skill in the art at the time of invention to increase the roughness of the multidimensionally meandering surface (textured surface with projecting portions) of the organic electroluminescent surface of Kimura as suggested by Manabe so that the actual length is more than at least twice the length of the projected length of the surface and satisfy the inequality (for 6 cut sections) for better averaging the interference effect and reduction in visual angle dependence since discovering optimum value of result effective variable is considered within the skill of the art.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,433,487 to Yamazaki, and further in view of US Patent Application Publication 2002/0101155 to Kimura.

Regarding claim 6 Yamazaki discloses (Figs. 1, 2 col. 7 lines 1-52) an organic EL element comprising a substrate 11, a first electrode 44 formed above the substrate, having a first surface adjacent to the substrate and a second surface opposite to the first surface, an emissive layer including an organic electroluminescent material 46, the emissive layer formed along the second surface of the first electrode, and a second electrode 47 formed above the emissive layer. Yamazaki discloses (col. 13 lines 13-24)

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the first electrode is formed by selective etching the surface of a lump of metal.

Yamazaki discloses the second surface of the first electrode having the multi-dimensionally meandering surface shape, such that a cross-section of the second surface of the first electrode meanders the cross-section being perpendicular to the surface of the substrate.

Yamazaki does not disclose the method of forming any second cross-section of the second surface of the first electrode meandering in a way that differs from the meandering shape of first cross-section, the second cross-section being parallel to the first cross-section.

Kimura in analogous art, discloses the second surface of the first electrode has a multi-dimensionally meandering surface shape such that a cross-section of the second surface of the first electrode meanders, the cross-section being perpendicular to the first surface of the substrate, any second cross-section of the second surface (on the protrusion 364) of the first electrode meanders in a way that differs from the meandering shape of first cross-section (on the insulating film 349), the second cross-section being parallel to the first cross-section, and the first and second cross-sections meander in directions other than perpendicular to the substrate and wherein the first and second surfaces of the emissive layer 350 have a multi-dimensionally meandering surface shape such that a cross-section of the emissive layer meanders, the cross-section being perpendicular to the first surface of the substrate, any second cross-section of the emissive layer meanders in a way that differs from the meandering shape of the first cross-section, the second cross-section being parallel to the first cross-section, and the



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first and second cross-sections of the emissive layer meander in directions other than perpendicular to the substrate. Kimura submits that this configuration with uneven surfaces of the first electrode, first and second surfaces of the emissive layer and the uneven surface of the second electrode results in incident light reflected in all directions and hence prevents copy-in on the display surface.

Therefore it would have been obvious to modify the first and second cross-sections of the second surface of the first electrode and the first and second cross-sections of the emissive layer of Yamazaki meander multidimensionally in different directions as suggested by Kimura for resulting in incident light reflected in all directions and hence preventing copy-in on the display surface.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 6,433,487 to Yamazaki, US Patent Application Publication 2002/0101155 to Kimura as applied to claim 6 above, and further in view of JP 2001338757 to Okada(of record).

Regarding claim 7 Yamazaki and Kimura do not expressly disclose the organic EL material deposited approximately uniformly along the multi-dimensionally meandering surface of the first electrode by electrolytic deposition.

Okada in same field of endeavor discloses the organic EL layer is formed by electrolytic deposition method. Okada notes that this method results in formation of uniform organic film over a wide area in an organic EL element having the organic EL layer.

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Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to form the organic EL layer of Yamazaki by electrolytic deposition method ad taught by Okada for forming the organic layer uniformly over a wide area.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1,6,8 and 9 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (571) 272-2463. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (571) 272-2457. The fax phone number for the organization is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sikha Roy/

Primary Examiner, Art Unit 2879